November 1966

Brief 66-10507

NASA TECH BRIEF

Panels Illuminated by Edge-Lighted Lens Technique

The problem:

To provide instrument panel lighting that produces no glare and thus reduces eye strain in the viewer. A means other than incandescent lamps is necessary to meet this requirement.

The solution:

The use of electroluminescent lamps to edge-light a specially ground lens provides the nonglare, reduced eye strain panel illumination.

How it's done:

The combination of a planoconcave lens to which four electroluminescent lamps are bonded, illuminates the panel. The lens is made from a 3-1/2-inch square piece of 0.281-inch thick borosilicate crown #1 glass plate. One surface is ground to a radius of 18 inches, leaving a 3/8-inch band along the diagonal on 4 corners. Electroluminescent lamps are bonded to each of four edges by a special adhesive and wired together to a common point. The concave surface of the lens is turned inward, facing toward the panel to eliminate Newton's rings.

Notes:

1. An alternate technique uses a deposition of electroluminescent elements to produce the light.
2. There is no noticeable falloff in brightness along the lens edge. Light intensity diminishes toward the lens center. A slight halo, observed along the lens edge, has no detrimental effect.
3. Inquiries concerning this innovation may be directed to:

   Technology Utilization Officer
   Manned Spacecraft Center
   Houston, Texas 77058
   Reference: B66-10507

Patent status:

No patent action is contemplated by NASA.

Source: G. E. Haag and R. B. Horsfall
of North American Aviation, Inc.
under contract to
Manned Spacecraft Center
(MSC-871)

Category 02